

Tribhuvan University
Institute of Science and Technology
Data Structure and Algorithm
2068

Full Marks : 60

Pass Marks : 24

Time : 3 hrs.

Section A

Attempt any two questions :

(10*2)

- 1.) Define queue as an ADT. Write a program for basic operations in Linear queues in array implementation.
- 2.) Why recursion is required? Explain with Tower-Of-Hanoi example. How Recursive algorithm makes program effective? Write the merits and demerits of recursion in programming.
- 3.) Explain in-fix to postfix conversion algorithm. Illustrate it with an example. What changes should be made for converting infix to prefix?

Section B

Attempt any eight questions :

(8*5=40)

- 4.) Explain Kruskal's algorithm with example.
- 5.) Write a program in C for bubble sorting.
- 6.) Differentiate between contiguous list and linked list with examples.
- 7.) Explain binary search. Illustrate it with example.
- 8.) Explain hashing with example.
- 9.) Explain why linked list is called dynamic list? Write the algorithm for deleting a new node before a node.
- 10.) Explain the characteristics of Huffman's algorithm and its application.
- 11.) Write merits and demerits of recursive function over non-recursive function.
- 12.) Write the steps involved in deleting a node in an Binary Search tree.
- 13.) Discuss merge sort. How you rate this sorting from selection sort?